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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/703,038	10/31/2000	Tony M. Brewer	59182-P004US-10020641	8896

29053 7590 02/13/2004

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EXAMINER

TON, ANTHONY T

ART UNIT	PAPER NUMBER
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2661

DATE MAILED: 02/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/703,038

Applicant(s)

BREWER ET AL.

Examiner

Anthony T Ton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/31/2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2 and 3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTIONS

Abstract

1. The abstract is objected to because of the following informalities:
Term "**There are a chunk**" in line 9 is not appropriate. The examiner suggests changing this term to "**There is a chunk**".
Appropriate correction is required.

Claim Objections

2. Claim 23 is objected to because of the following informalities: Term "that are each not larger than" in line 3 is not appropriate. The examiner suggests changing this term to "that are each is not larger than".
Appropriate correction is required.

Claim Rejections - 35 USC § 112, first paragraph

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. **Claim 23** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The following subject matters of the claimed limitation are not adequately disclosed in the specification: "wherein said at least one packet segment is selected from the group consisting of a segment of an IP packet that is larger than said chunk data payload and multiple complete IP packets that are each not larger than said chunk data payload.". Examiner could not see any disclosures in the specification for such subject matters, especially, the claimed limitations of **a segment of an IP packet that is larger than said chunk data payload and multiple complete IP packets.**

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-4, 14-22, 24-29, 37-48, 53 and 57-62** are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodward et al. (US Patent No. 6,151,318) in view of Miles et al. (US Patent No. 6,665,495).

a) **Regarding to Claim 1:** Woodward et al. (Woodward) disclosed a system, comprising:

a switch fabric configured such that information flows through said switch fabric from a plurality of source ports to a plurality of destination ports in substantially fixed sized chunks (see Fig.1 for multiple ATM cells encapsulated in a single packet), each said chunk being formatted to include a framing symbol (see fragment type 34 in Fig. 1;

this fragment type functions as the framing symbol of the claimed limitation of this claim; for detailed description of such a type, see col.3 lines 40-65 and col.5 lines 2-19).

Based on the above disclosures, Woodward failed to teach a switch fabric and a plurality of source and destination ports in his system. However, Miles clearly disclosed such a switch fabric (see block 30 in Fig. 4) and a plurality of source and destination ports (see Ingress and Egress edge units in Fig. 4). Therefore, it would have been obvious to one of ordinary skilled in the art would provide such a switch fabric and a plurality of source and destination ports throughout the system of Woodward, as taught by Miles for routing data information from a plurality of source ports through a switch fabric to a plurality of destination ports, the motivation being to make Woodward more efficient.

b) Regarding to Claims 2 and 3: Woodward did not disclose the location of the framing symbol and the length of the framing symbol. However, the location and length of a framing symbol is well known in the art of invention. Therefore, it would have been obvious to one of ordinary skilled in the art can provide such location and length of a framing symbol throughout the packet of Woodward, as a design choice in order to route data information through the system of Woodward, and the motivation being to make Woodward more reliable.

c) Regarding to Claim 4: Woodward did not clearly disclose two bits of said framing symbol intermixed in each of 56 contiguous bytes of said chunk immediately followed by two contiguous bytes of said framing symbol. However, Woodward disclosed fragment type included in each packet (see Fig. 3). Therefore, it would have

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been obvious to one of ordinary skilled in the art can provide such a claimed invention throughout the last ATM packets of Woodward, as taught by applicant in order to route data information through the system of Woodward, and the motivation being to make Woodward more reliable.

d) Regarding to Claims 14, 15 and 22: The router system of claim 1 wherein each said chunk is further formatted to include a chunk header (claim 14) (see Woodward: block 32 in Fig.1); the router system of claim 14 wherein said chunk header includes identification of chunk type (claim 15) (see Woodward: col.2 lines 56-59); and the router system of claim 1 wherein each said chunk further contains a chunk data payload comprising at least one packet segment and an associated packet header (claim 22) (see Woodward: Block 36 in Fig.1).

Therefore, it would have been obvious to one of ordinary skilled in the art would provide such a switch fabric and a plurality of source and destination ports throughout the system of Woodward, as taught by Miles for routing data information from a plurality of source ports through a switch fabric to a plurality of destination ports, the motivation being to make Woodward more efficient.

e) Regarding to Claims 16 and 24: Woodward failed to teach said switch fabric is partitioned into a plurality of working subplanes (claim 16), and said switch fabric comprises an optical switch (claim 24). However, Miles clearly disclosed such said switch fabric is partitioned into a plurality of working subplanes (see Miles: Figs.1-3); and said switch fabric comprises an optical switch (see Miles: block 30 in Fig.4).

Therefore, it would have been obvious to one of ordinary skilled in the art would provide such subject matters of the claims 16 and 24 throughout the system of Woodward, as taught by Miles for routing data information to multiple users in a high data rate in the motivation of providing a good service to customers.

f) **Regarding to Claims 17, 18, 20 and 21:** The router system of claim 16 wherein said chunk header includes identification of a specific routing subplane through said switch fabric (claim 17) (see Woodward: col.2 lines 56-59); the router system of claim 14 wherein said chunk header includes a header parity (claim 18) (see Woodward: a header parity can be included in the additional header information 32 as recited in col.2 lines 56-59); the router system of claim 14 wherein said chunk header includes a master chunk bit (claim 20) (see Woodward: two Bytes PAD in Fig.3; one bit of these Bytes can be used as master bit in the 16th data packet; wherein this packet is considered as a master packet); and the router system of claim 14 wherein said chunk header includes a sequence number (claim 21) (see Woodward: col.6 lines 48-57).

Therefore, it would have been obvious to one of ordinary skilled in the art would provide such a switch fabric and a plurality of source and destination ports throughout the system of Woodward, as taught by Miles for routing data information from a plurality of source ports through a switch fabric to a plurality of destination ports, the motivation being to make Woodward more efficient.

g) **Regarding to Claim 19:** Woodward failed to teach wherein said chunk header includes identification of source port and destination port for said chunk.

However, it is inherent that Woodward taught these subject matters of this claim because the ID of source and destination ports (addresses) is official notice.

Therefore, it would have been obvious to include identification of source port and destination port for said chunk in Woodward, since it is old and well known in the environment of the invention, the motivation being to would make Woodward more reliable.

h) Regarding to claims 25 and 26: Woodward disclosed a method of information flow through a network router system comprising:

encapsulating input data packets from a plurality of source ports into substantially fixed sized chunks (see Woodward: Fig.1 for multiple ATM cells encapsulated in a single packet);

formatting overhead information onto each of said chunks, said overhead including a framing symbol (see fragment type 34 in Fig. 1; this fragment type functions as the framing symbol of the claimed limitation of this claim; for detailed description of such a type, see col.3 lines 40-65 and col.5 lines 2-19);

directing said chunks through a switch fabric toward a plurality of destination ports;

performing error detection and error correction on said chunks (see Woodward: col.2 lines 31-32 for error detection, and col.8 line 35-37 for error correction);

removing said overhead information from said chunks (see Woodward: step 540 in Fig.5);

reassembling said input data packets out of said chunks (see Woodward: step 550 in Fig.5); and

wherein all information flows through said switch fabric in said substantially fixed sized chunks (see Woodward: Fig.1; multiple ATM cells encapsulated in a single packet).

Based on the disclosures above, Woodward failed to teach a step of directing said chunks through a switch fabric toward a plurality of destination ports. However, Miles clearly disclosed such a step (see block 30 in Fig. 4). Therefore, it would have been obvious to one of ordinary skill in the art would provide such a step of directing said chunks through a switch fabric toward a plurality of destination ports throughout the system of Woodward, as taught by Miles for routing data information through a switch fabric to a plurality of destination ports, the motivation being to make Woodward more faster in a multiple customer service network.

i) **Regarding to Claims 27-29, 37-44 and 45:** These claims are rejected for the same reasons as claims 2-4, 14-21 and 24, respectively because the method steps claimed can be practice with the apparatus in the claims 2-4, 14-21 and 24.

j) **Regarding to Claim 47:** This claim is rejected for the same reasons as claim 17 because the method steps claimed can be practice with the apparatus in the claim 17.

k) **Regarding to claims 46, 48 and 53:** Both Woodward and Miles did not clearly teach the following subject matters of the claims: wherein said directing comprises using said identification of chunk type in said chunk header to enable

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guaranteed bandwidth chunks to pass ahead of best effort chunks through said switch fabric (claim 46); wherein said directing comprises using said identification in said chunk header of source port and destination port to route said chunks from a selected source port to a selected destination port (claim 48); and wherein said directing comprises using said framing symbol in each said chunk to determine uniquely within a stream of bits the beginning and the trailing end of said chunk. However, official notice is taken such subject matters are well known in the field of the invention. Therefore, it would have been obvious to one of ordinary skilled in the art can provide such subject matters of these claims throughout the method of Woodward as a design choice, the motivation being to route data information through a communications network more efficiency and greater reliability.

1) Regarding to claims 57-62: Both Woodward and Miles did not clearly teach the following subject matters of the claims: wherein said performing error detection and correction comprises using said sequence number in said chunk header for alarming and for alerting that a chunk potentially was corrupted (claim 57); wherein a re-initialize bit is used to enable reinitialization of said sequence number, such that said alarming is avoided (claim 58); wherein said performing error detection and correction comprises using said identification in said chunk header of source port and destination port to verify the route of said chunks from a selected source port to a selected destination port (claim 59); wherein said substantially fixed sized chunks each have a length of approximately 400 bytes (claim 60); wherein said fixed sized chunk contains multiple

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data packets (claim 61); and wherein said fixed sized chunk contains a segment of a data packet, said data packet having a length greater than 400 bytes.

Both Woodward and Miles did not clearly teach the subject matters of the claimed limitations of these claims. However, official notice is taken such subject matters are well known in the field of the invention. Therefore, it would have been obvious to one of ordinary skill in the art can provide such subject matters of these claims throughout the method of Woodward as a design choice, the motivation being to route data information through a communications network more efficient and reliable.

7. **Claims 5, 6, 11, 12, 30, 31, 55 and 56** are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodward et al. (US Patent No. 6,151,318) in view of Miles et al. (US Patent No. 6,665,495) as applied to claims 1-4 above, and further in view of Feldmeier (US Patent No. 5,583,859).

a) **Regarding to claims 5, 6, 11 and 12:** Both Woodward and Miles failed to teach the following subject matters of these claims: the router system of claim 1 wherein each said chunk is further formatted to include forward error correction (FEC) coding (claim 5); the router system of claim 4 wherein said FEC coding is located adjacent and following said framing symbol (claim 6); the router system of claim 4 wherein each said chunk is further formatted to include a chunk cyclical redundancy check (CRC) field (claim 11); and the router system of claim 11 wherein said chunk CRC field is located adjacent and preceding said two contiguous bytes of said framing symbol (claim 12).

However, Feldmeier disclosed such subject matters (see col.8 lines 49-65). Therefore, it would have been obvious to those skilled in the art to include such subject matters of these claims in Woodward as a design choice since the location of FEC field can be located anywhere in a data packet and CRC are well known in the environment of the invention, and the motivation would make Woodward more efficient.

b) **Regarding to Claims 30 and 31:** These claims are rejected for the same reasons as claims 5 and 11, respectively because the method steps claimed can be practice with the apparatus in the claims 5 and 11.

c) **Regarding to Claims 55 and 56:** These claims are rejected for the same reasons as claims 5, and 11 & 12, respectively because the method steps claimed can be practice with the apparatus in the claims 5, and 11 & 12.

8. **Claims 7-10, 33-36, 49 and 50-52** are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodward et al. (US Patent No. 6,151,318) in view of Miles et al. (US Patent No. 6,665,495) as applied to claims 1-4 above, and further in view of Martin (UK Patent Application No. 2,086,184).

a) **Regarding to Claims 7-10:** Woodward, Miles and Martin failed to teach a preamble for a chunk format; and both Woodward and Miles failed to teach "Break Bytes" and "Make Bytes" fields in a chunk format. However, a preamble is normally used in IEEE 802.3 and 802.4 frame formats to allow a receiving station to acquire clock synchronization before receiving the frame contents. In addition, both Woodward and Miles failed to teach "Break Bytes" and "Make Bytes" fields. Martin disclosed such

"Break Bytes" and "Make Bytes" fields (see Martin: page 2 lines 73-100), and Martin did not explicitly disclose "Break Bytes" and "Make Bytes" fields are located at the beginning of a data packet. However, the location of "Break Bytes" and "Make Bytes" fields is a design choice.

Therefore, it would have been obvious to those skilled in the art to include such subject matters of the claimed limitation throughout the ATM cells of Woodward in order to make Woodward more efficient and reliable because "Break Bytes" and "Make Bytes" fields located at the beginning of a data packet in a purpose of preconditioning for an optical receiver to be in proper state before receiving actual data arrived at the receiver.

b) Regarding to Claims 33 and 49: Each of these claims is rejected for the same reasons as claim 7 because the method steps claimed can be practice with the apparatus in the claim 7.

c) Regarding to Claims 35 and 50: Each of these claims is rejected for the same reasons as claim 8 because the method steps claimed can be practice with the apparatus in the claim 8.

d) Regarding to Claims 51 and 52: Woodward, Miles and Martin did not clearly teach "Break Bytes" field maintains a 50 percent density of ones and zeros for a laser beam and wherein said "Make Bytes" field reestablishes a decision threshold level of a limiting amplifier within a burst mode optical receiver. However, such subject matters are used to balance zeroes and ones for transmitting data information going through an optical switch in a dark period. Therefore, it would have been obvious to one of ordinary skilled in the art can provide such subject matters of these claims throughout the

method of Woodward, as taught by applicant for DC balance going through in an optical switch, the motivation being to make Woodward more reliable.

e) **Regarding to Claims 34 and 36:** Woodward, Miles and Martin did not clearly teach the subject matters of the claimed limitations of these claims. However, such subject matters are design choices in software programming. Therefore, it would have been obvious to one of ordinary skill in the art can provide such subject matters of these claims throughout the method of Woodward, as taught by applicant so that data information can be routed through a switch fabric more controllable, and the motivation being to make Woodward more reliable.

9. **Claims 13, 32 and 54** are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodward et al. (US Patent No. 6,151,318) in view of Miles et al. (US Patent No. 6,665,495) as applied to claims 1-4 above, and further in view of Enns et al. (US Patent No. 6,658,010).

a) **Regarding to Claim 13:** The router system of claim 1 wherein each said chunk is further formatted to include a scrambler seed.

Both Woodward and Miles failed to teach a scrambler seed included in a chunk. Enns et al. (Enns) disclosed such a scrambler (see controller 12 in Fig.2 and col.9 lines 21-25). Therefore, it would have been obvious to those skilled in the art to include such a scrambler throughout the ATM cells of Woodward in order to save the length of packets, as well as balance zeros and ones of data in a packet, and the motivation being to make Woodward more reliable.

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b) **Regarding to Claims 32 and 54:** The claimed limitations in the claim 13 are the same as that in each of claims 32 and 54, except for balance zeroes and ones in the claim 54. However, the step of balance zeroes and ones is a usual method in SONET. Therefore, each of these claims is rejected for the same reasons as claim 13 because the method steps claimed can be practice with the apparatus in the claim 13.

Conclusion

10. The prior art made of record is considered pertinent to applicant's disclosure is relating to the field of a chunk format in a router: Wilford et al. (US 6,687,247); Baroudi (US 6,594,278); Oda et al. (US 6,522,667); Nelson et al. (US 6,061,358); Berman (US 6,470,007); Reed (US 5,577,180); Crawford et al. (US 6,438,515); and Walker (US 6,278,709).

Examiner Information


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony T Ton whose telephone number is 703-305-8956. The examiner can normally be reached on M-F: 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W Olms can be reached on 703-305-4703. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

ATT



KENNETH VANDERPUYE
PRIMARY EXAMINER